Metadata Creation and Editing Tools

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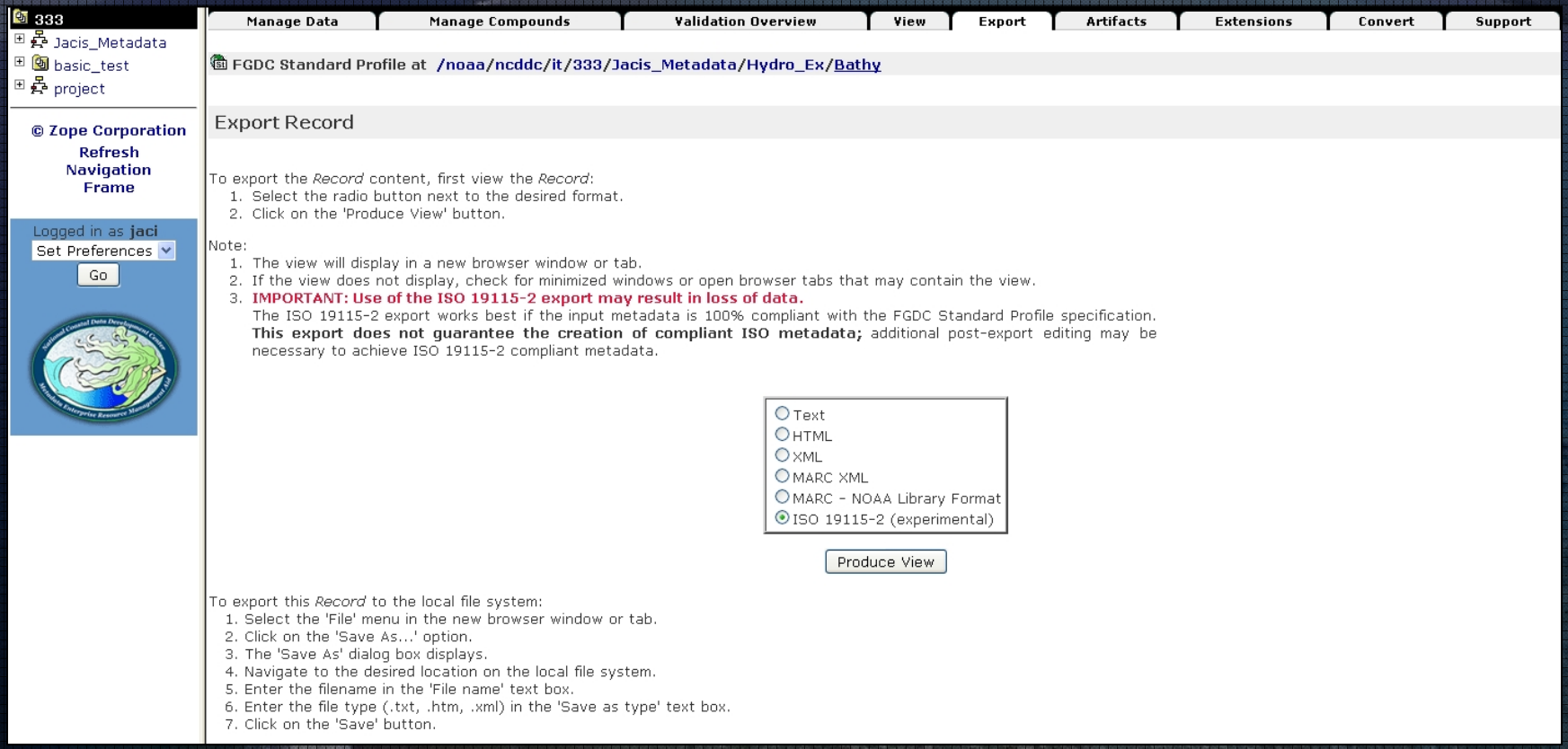
Tools for Creating and Editing ISO Metadata

Tools for Creating and Editing ISO Metadata

Various tools created depending on User needs

- Desktop vs. Web Applications
- GUI vs. XML

MERMAid



https://mermaid.ncddc.noaa.gov/request-account

MERMAid

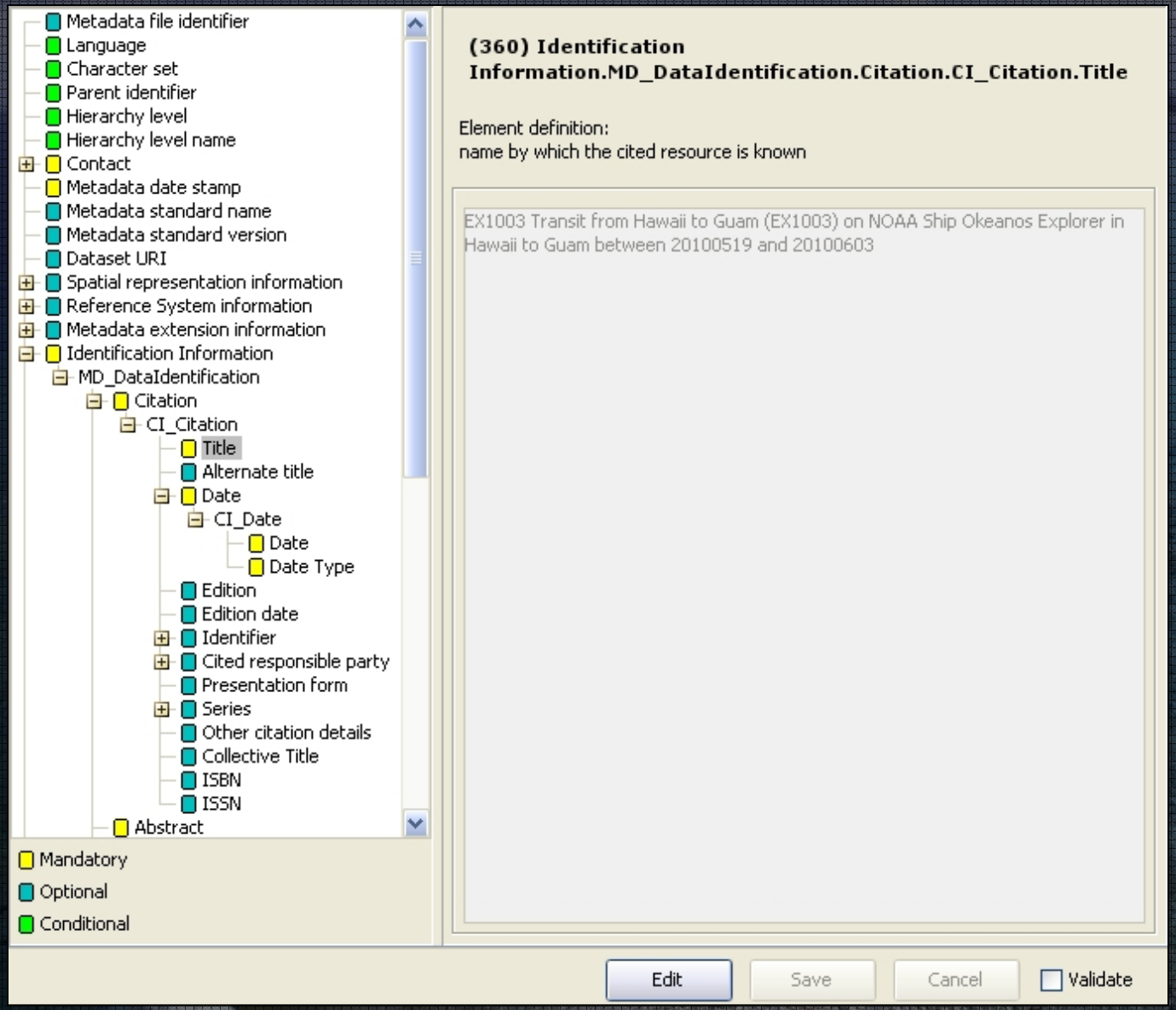
PROS

- Native FGDC CSDGM, RSE, BIO, Shoreline
- Exports ISO 19115-2, ISO 19110
- Good validation
- Ingest and export records
- Platform independent
- GUI
- Customizable
- Open-source
- Free

CONS

- No native ISO editing environment
- Moving away from this tool
- Tool for transition only!

CatMDEdit


Metadata file identifier
Language
Character set
Parent identifier
Hierarchy level
Hierarchy level name
Contact
Metadata date stamp
Metadata standard name
Metadata standard version
Dataset URI
Spatial representation information
Reference System information
Metadata extension information
Identification Information
MD_DataIdentification
Citation
CI_Citation
Title
Alternate title
Date
CI_Date
Date
Date Type
Edition
Edition date
Identifier
Cited responsible party
Presentation form
Series
Other citation details
Collective Title
ISBN
ISSN
Abstract
Mandatory
Optional
Conditional
(360) Identification Information.MD_DataIdentification.Citation.CI_Citation.Title
Element definition:
name by which the cited resource is known
EX1003 Transit from Hawaii to Guam (EX1003) on NOAA Ship Okeanos Explorer in Hawaii to Guam between 20100519 and 20100603
Edit
Save
Cancel
Validate

CatMDEdit

- Customization of the tool to support new standards and metadata profiles according to user needs.
- Automatic metadata generation for some data file formats: Shapefile, DGN, ECW, FICC, GeoTiff, GIF/GFW, JPG/JGW, PNG/PGW.
- Automatic metadata generation from the "getCapabilities" operation supported by a service that complies with the OGC Specifications (WMS, CSW, WFS, WCS or WPS).

CatMDEdit

- Exchange of metadata records according to different standards in XML and RDF
- Presentation of metadata records using different view formats, such as HTML
- Free download

http://catmdedit.sourceforge.net/

CatMDEdit

PROS

- ISO 19115, ISO 19110, ISO 19119, CSDGM, Dublin Core
- Good validation
- Ingest and export records
- Auto generation for some file formats
- Platform independent
- Multilingual
- GUI
- Customizable
- Open-source
- Free

CONS

- No ISO 19115-2, Biological, or NAP support
- No search or common catalog
- No transform engine
- No XML attributes

GeoNetwork


GeoNetwork Opensource
Geographic data sharing for everyone
Home | Administration | Contact us | Links | About | Help |
English
User: admin admin
Logout
Default view
By Group
ISO Minimum
ISO Core
ISO All
By Package
Metadata
Identification
Maintenance
Constraints
Spat. Info
Ref. system
Distribution
Data quality
App. schema
Catalog
Content Info
Ext. Info
XML view
Create
Edit
Delete
Other actions
Logo
EX1003 TRANSIT FROM HAWAII TO GUAM (EX1003) ON NOAA SHIP OKEANOS EXPLORER IN HAWAII TO GUAM BETWEEN 20100519 AND 20100603
No preview available
Identification info
Data identification
Citation
Citation
Title
EX1003 Transit from Hawaii to Guam (EX1003) on NOAA Ship Okeanos Explorer in Hawaii to Guam between 20100519 and 20100603
Date
Date
Date
2010
Date type
Publication: Date identifies when the resource was issued
Citation identifier
Identifier
Code
EX1003

GeoNetwork

- GeoNetwork is a catalog application to manage spatially referenced resources. It provides powerful metadata editing and search functions, as well as an embedded interactive web map viewer.
  - Platform independent
  - Multilingual
  - Multiple standards

ISO 19139
FGDC CSDGM
ISO 19115
ISO 19115-2

ISO 19119
ISO 19110
Dublin Core

GeoNetwork

- Presentation of metadata records using different view formats, such as HTML.
- Free download

http://geonetwork-opensource.org/

GeoNetwork

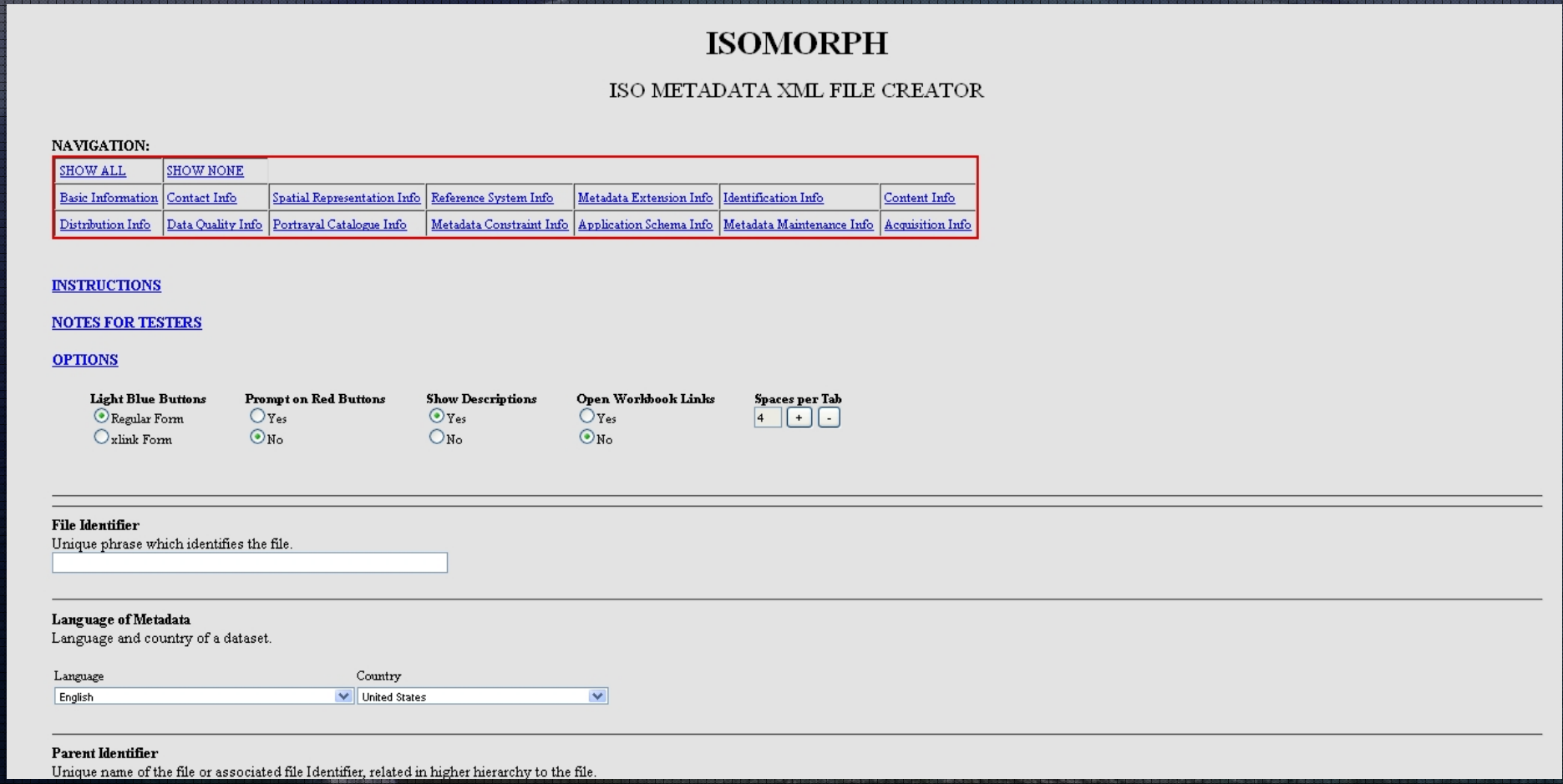
PROS

- ISO 19115, ISO 19115-2, ISO 19110, ISO 19119, CSDGM, Dublin Core
- Good validation
- Ingest and export batch records
- Search interface
- Platform independent
- Multilingual
- GUI
- Customizable
- Common repository
- Open-source
- Free

CONS

- Complicated start-up
- Validation errors are hard to understand sometimes
- No biological or NAP support
- Transform engine cannot support Xpath 2.0 (FGDC-ISO transforms)

ISOMorph


ISOMORPH
ISO METADATA XML FILE CREATOR
NAVIGATION:
SHOW ALL
SHOW NONE
Basic Information
Contact Info
Spatial Representation Info
Reference System Info
Metadata Extension Info
Identification Info
Content Info
Distribution Info
Data Quality Info
Portrayal Catalogue Info
Metadata Constraint Info
Application Schema Info
Metadata Maintenance Info
Acquisition Info
INSTRUCTIONS
NOTES FOR TESTERS
OPTIONS
Light Blue Buttons
Regular Form
xlink Form
Prompt on Red Buttons
Yes
No
Show Descriptions
Yes
No
Open Workbook Links
Yes
No
Spaces per Tab
4
+
-
File Identifier
Unique phrase which identifies the file.
Language of Metadata
Language and country of a dataset.
Language
English
Country
United States
Parent Identifier
Unique name of the file or associated file Identifier, related in higher hierarchy to the file.

ISOMorph

PROS

- Free to use
- ISO 19115-2
- Good validation
- Linked to workbooks
- Platform independent
- GUI
- Customizable
- Supports xlinks
- Domain drop-downs
- Insert existing metadata

CONS

- Must save externally
- No internal validation

ISOMorph

http://asd.radiancetech.com/isomorph/

Geoportal


OCEAN
EXPLORATION & RESEARCH
Welcome, gptadmin Logout My Profile Help About Feedback
geoportal
prototype
HOME
METADATA SEARCH
BROWSE
ADMINISTRATION
Manage Add
Metadata Editor
Save as Draft
Save
ISO 19115 (Data)
Metadata
Identification
Distribution
Quality
Identifier
Contact
Date
Standard
Reference
File Identifier
{1907DADE-DF16-4D73-9D17-4FA5CFB3FF95}
Metadata Language
en
Hierarchy Level
Dataset
* Bold-Italic labels indicate a required field
The OER Geoportal was built using the Geoportal Server. Please read the Disclaimer and Privacy or Contact Us.

Geoportal

PROS

- Partial FGDC CSDGM, RSE, ISO 19115, 19115-2, and 19110
- Auto populates some fields
- Provides some drop-down menus
- Integrated workflow

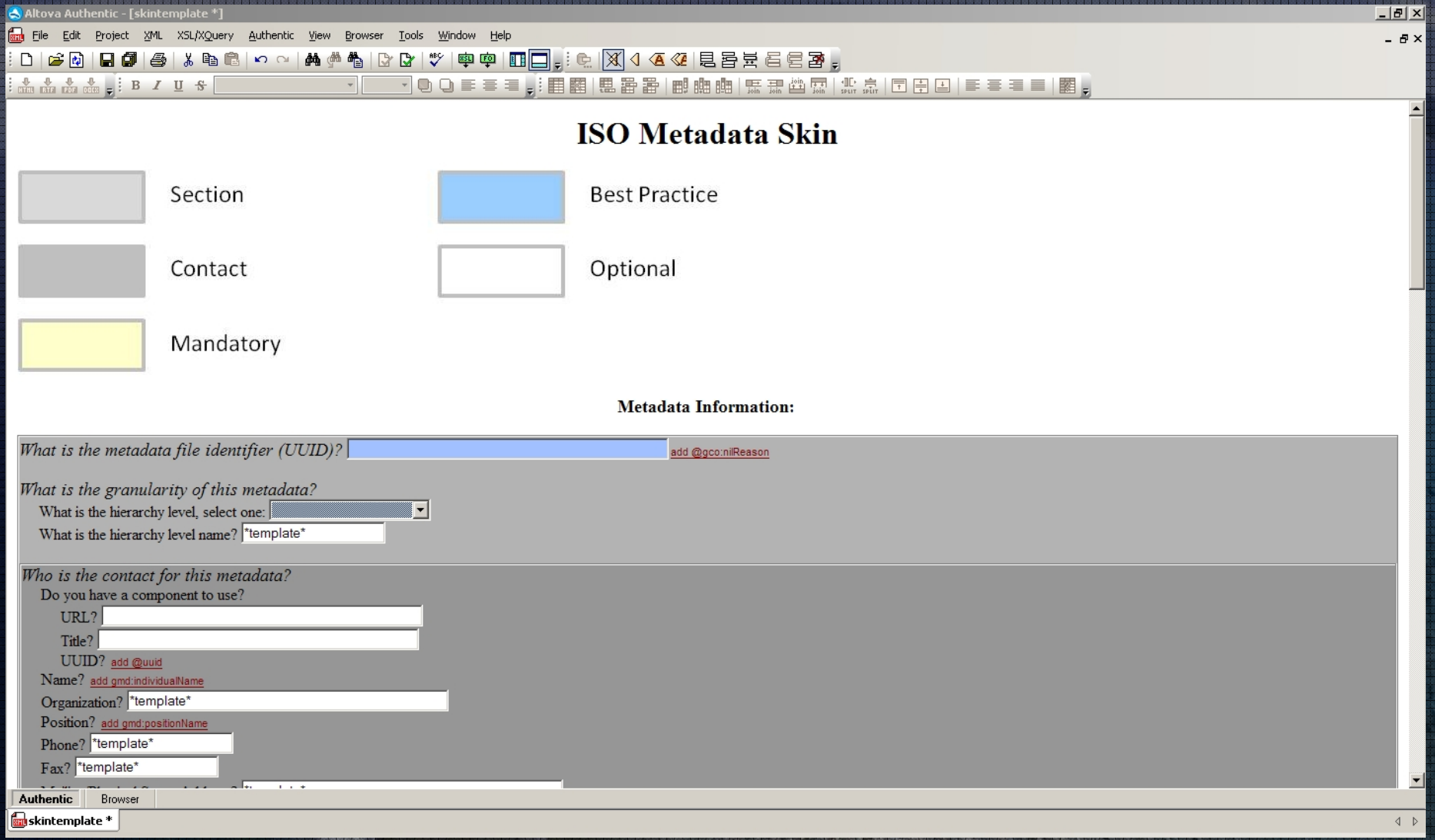
CONS

- Does not support full standards
- No biological support
- Transform engine cannot support Xpath 2.0 (FGDC-ISO transforms)
- Few XML attributes
- Cannot edit auto populated fields without editing code

Geoportal

http://sourceforge.net/projects/geoportal/

Altova Authentic



Altova Authentic

PROS

- Free
- Customizable GUI via skins
- Desktop or web-based
- Supports any standard

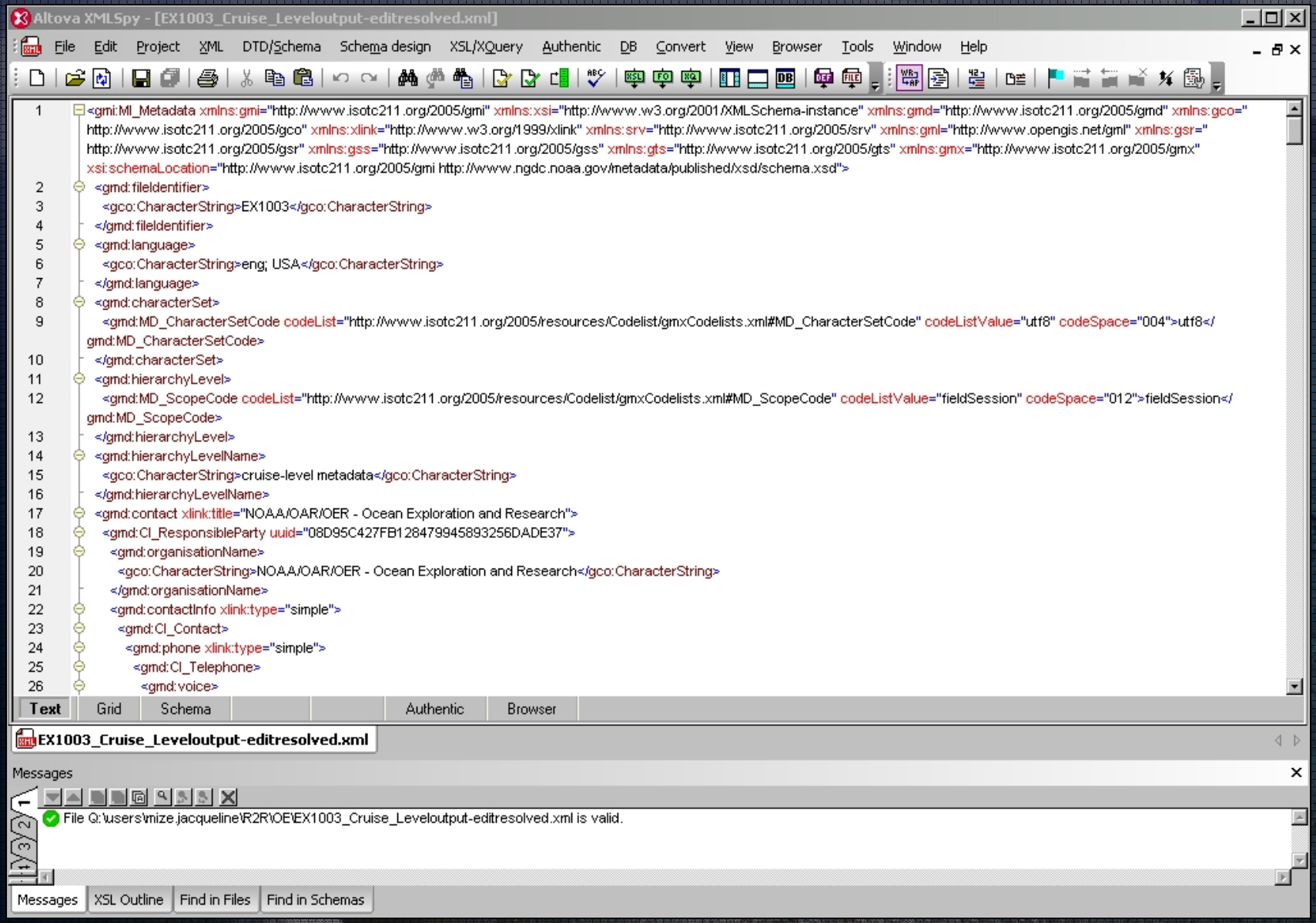
CONS

- Skin development externally

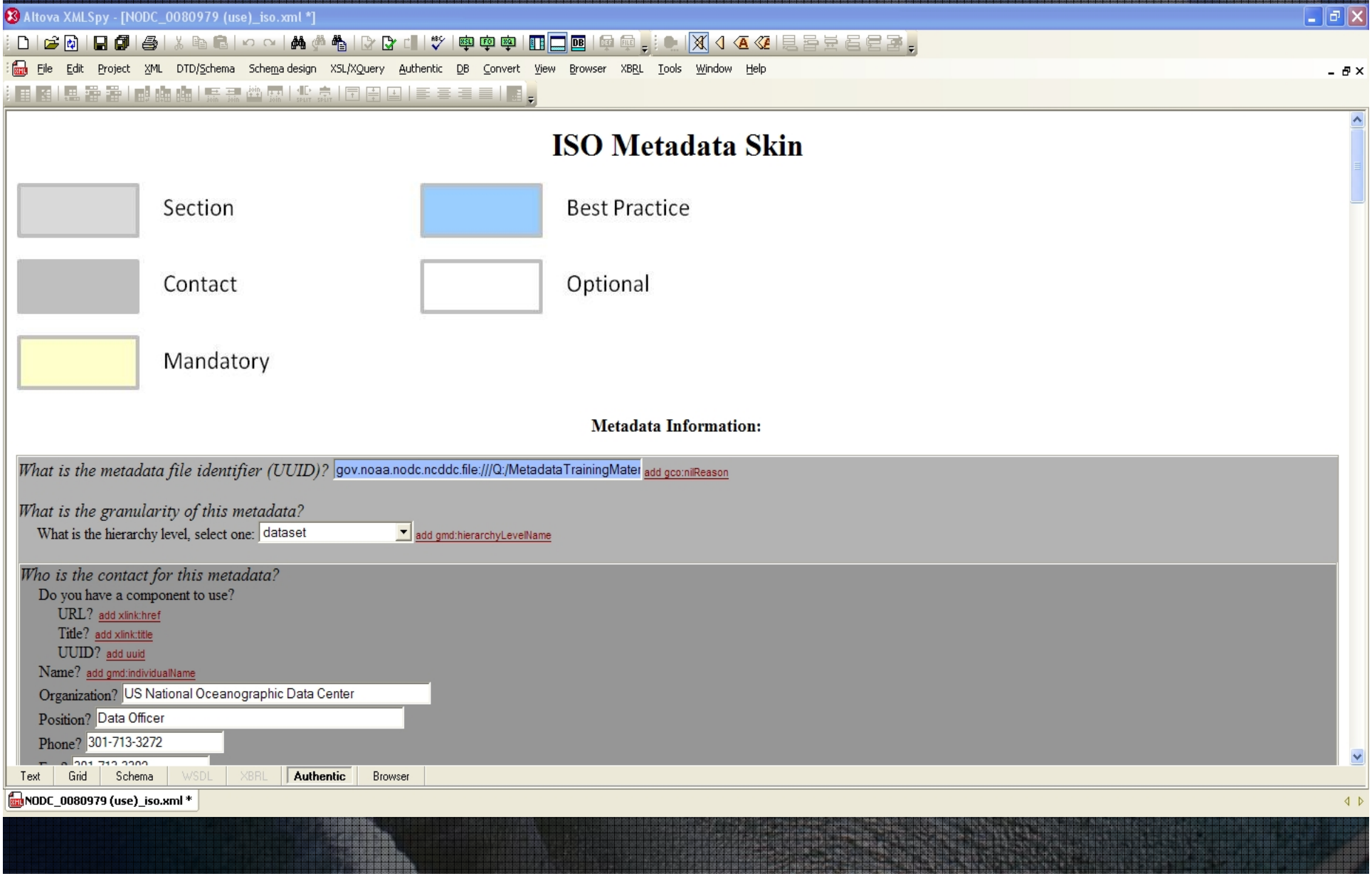
Altova Authentic

http://www.altova.com/download_components.html

XMLSpy


Altova XMLSpy - [EX1003_Cruise_Leveloutput-editresolved.xml]
File Edit Project XML DTD/Schema Schema design XSL/XQuery Authentic DB Convert View Browser Tools Window Help
<gmi:MI_Metadata xmlns:gmi="http://www.isotc211.org/2005/gmi" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:gco="
http://www.isotc211.org/2005/gco" xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:srv="http://www.isotc211.org/2005/srv" xmlns:gml="http://www.opengis.net/gml" xmlns:gsr="
http://www.isotc211.org/2005/gsr" xmlns:gss="http://www.isotc211.org/2005/gss" xmlns:gts="http://www.isotc211.org/2005/gts" xmlns:gmx="http://www.isotc211.org/2005/gmx"
xsi:schemaLocation="http://www.isotc211.org/2005/gmi http://www.ngdc.noaa.gov/metadata/published/xsd/schema.xsd">
<gmd:fileIdentifier>
<gco:CharacterString>EX1003</gco:CharacterString>
</gmd:fileIdentifier>
<gmd:language>
<gco:CharacterString>eng; USA</gco:CharacterString>
</gmd:language>
<gmd:characterSet>
<gmd:MD_CharacterSetCode codeList="http://www.isotc211.org/2005/resources/Codelist/gmxCodelists.xml#MD_CharacterSetCode" codeListValue="utf8" codeSpace="004">utf8</
gmd:MD_CharacterSetCode>
</gmd:characterSet>
<gmd:hierarchyLevel>
<gmd:MD_ScopeCode codeList="http://www.isotc211.org/2005/resources/Codelist/gmxCodelists.xml#MD_ScopeCode" codeListValue="fieldSession" codeSpace="012">fieldSession</
gmd:MD_ScopeCode>
</gmd:hierarchyLevel>
<gmd:hierarchyLevelName>
<gco:CharacterString>cruise-level metadata</gco:CharacterString>
</gmd:hierarchyLevelName>
<gmd:contact xlink:title="NOAA/OAR/OER - Ocean Exploration and Research">
<gmd:CI_ResponsibleParty uuid="08D95C427FB128479945893256DADE37">
<gmd:organisationName>
<gco:CharacterString>NOAA/OAR/OER - Ocean Exploration and Research</gco:CharacterString>
</gmd:organisationName>
<gmd:contactInfo xlink:type="simple">
<gmd:CI_Contact>
<gmd:phone xlink:type="simple">
<gmd:CI_Telephone>
<gmd:voice>
Text Grid Schema Authentic Browser
EX1003_Cruise_Leveloutput-editresolved.xml
Messages
File Q:\users\mize.jacqueline\R2R\OE\EX1003_Cruise_Leveloutput-editresolved.xml is valid.
Messages XSL Outline Find in Files Find in Schemas

XMLSpy


Altova XMLSpy - [NODC_0080979 (use)_iso.xml *]
File Edit Project XML DTD/Schema Schema design XSL/XQuery Authentic DB Convert View Browser XBRL Tools Window Help
ISO Metadata Skin
Section
Best Practice
Contact
Optional
Mandatory
Metadata Information:
What is the metadata file identifier (UUID)?
gov.noaa.nodc.ncddc.file:///Q:/MetadataTrainingMater
add gco:nilReason
What is the granularity of this metadata?
What is the hierarchy level, select one:
dataset
add gmd:hierarchyLevelName
Who is the contact for this metadata?
Do you have a component to use?
URL? add xlink:href
Title? add xlink:title
UUID? add uuid
Name? add gmd:individualName
Organization? US National Oceanographic Data Center
Position? Data Officer
Phone? 301-713-3272
Text Grid Schema WSDL XBRL Authentic Browser
NODC_0080979 (use)_iso.xml *

XMLSpy

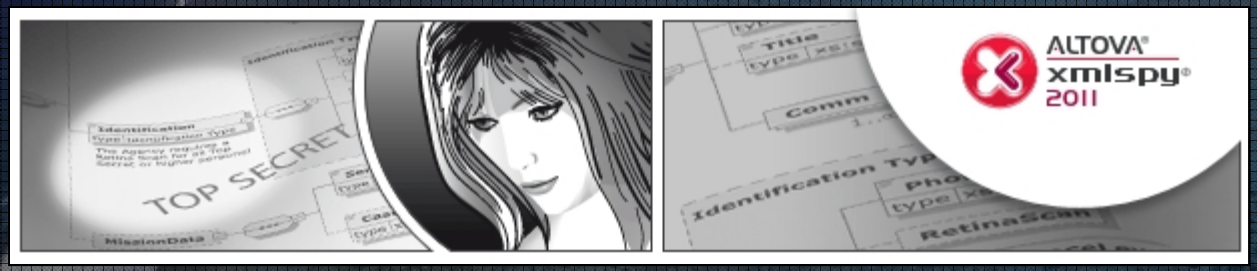
PROS

- More power!
- Support any standard if you have the schemas
- Easy to edit
- Batch functions
- Nice graphics generated from schemas
- Performs transformations
- Performs validation
- Skins
- Ties into other tools
- Everything you need in a single tool

CONS

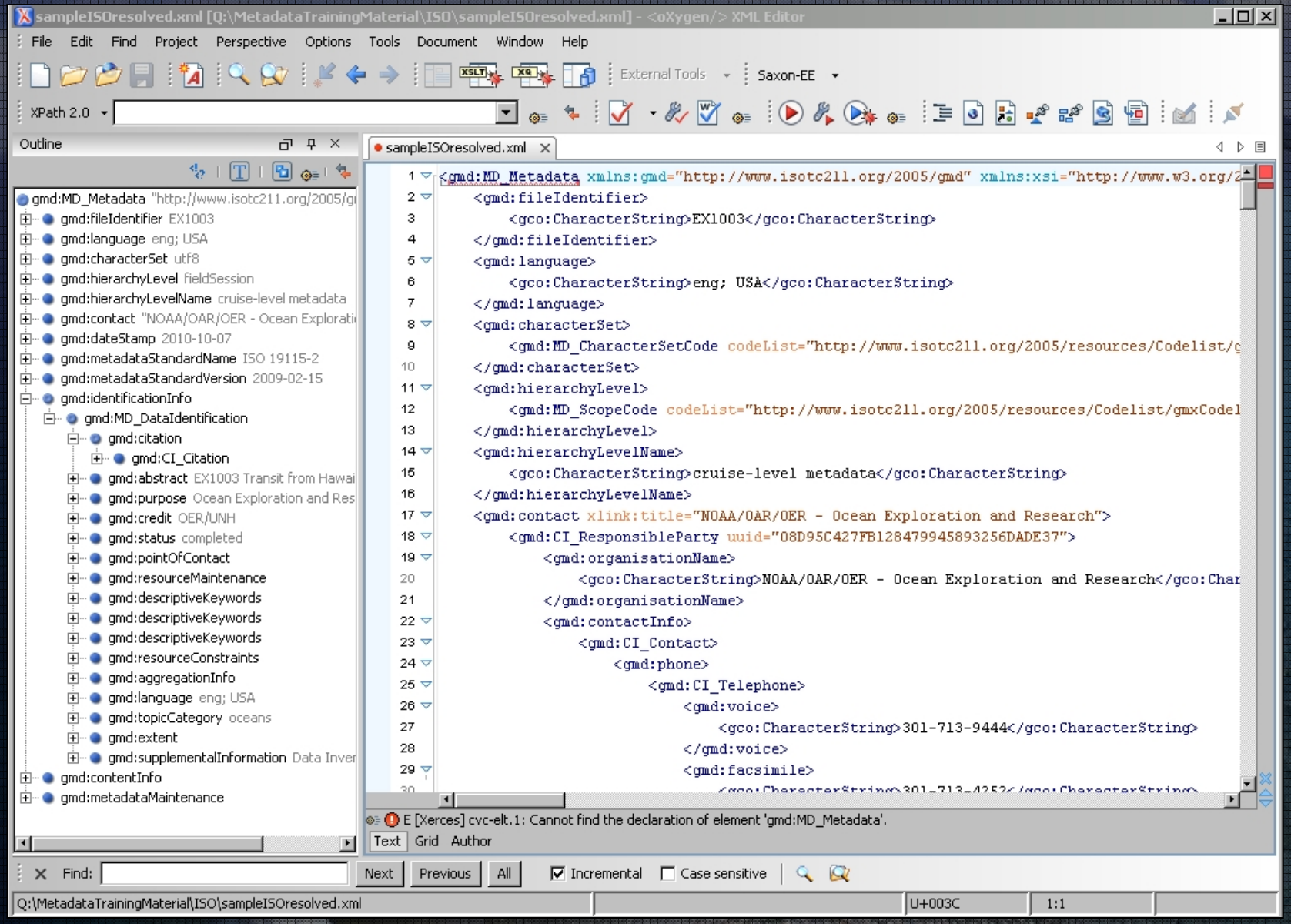
- Software costs

XMLSpy



http://www.altova.com/xmlspy.html

oXygen


sampleISOresolved.xml [Q:\MetadataTrainingMaterial\ISO\sampleISOresolved.xml] - <oXygen/> XML Editor
File Edit Find Project Perspective Options Tools Document Window Help
External Tools
Saxon-EE
XPath 2.0
Outline
sampleISOresolved.xml
gmd:MD_Metadata "http://www.isotc211.org/2005/g
gmd:fileIdentifier EX1003
gmd:language eng; USA
gmd:characterSet utf8
gmd:hierarchyLevel fieldSession
gmd:hierarchyLevelName cruise-level metadata
gmd:contact "NOAA/OAR/OER - Ocean Explorati
gmd:dateStamp 2010-10-07
gmd:metadataStandardName ISO 19115-2
gmd:metadataStandardVersion 2009-02-15
gmd:identificationInfo
gmd:MD_DataIdentification
gmd:citation
gmd:CI_Citation
gmd:abstract EX1003 Transit from Hawai
gmd:purpose Ocean Exploration and Res
gmd:credit OER/UNH
gmd:status completed
gmd:pointOfContact
gmd:resourceMaintenance
gmd:descriptiveKeywords
gmd:descriptiveKeywords
gmd:descriptiveKeywords
gmd:resourceConstraints
gmd:aggregationInfo
gmd:language eng; USA
gmd:topicCategory oceans
gmd:extent
gmd:supplementalInformation Data Inver
gmd:contentInfo
gmd:metadataMaintenance
<gmd:MD_Metadata xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xsi="http://www.w3.org/2
<gmd:fileIdentifier>
<gco:CharacterString>EX1003</gco:CharacterString>
</gmd:fileIdentifier>
<gmd:language>
<gco:CharacterString>eng; USA</gco:CharacterString>
</gmd:language>
<gmd:characterSet>
<gmd:MD_CharacterSetCode codeList="http://www.isotc211.org/2005/resources/Codelist/g
</gmd:characterSet>
<gmd:hierarchyLevel>
<gmd:MD_ScopeCode codeList="http://www.isotc211.org/2005/resources/Codelist/gmxCodel
</gmd:hierarchyLevel>
<gmd:hierarchyLevelName>
<gco:CharacterString>cruise-level metadata</gco:CharacterString>
</gmd:hierarchyLevelName>
<gmd:contact xlink:title="NOAA/OAR/OER - Ocean Exploration and Research">
<gmd:CI_ResponsibleParty uuid="08D95C427FB128479945893256DADE37">
<gmd:organisationName>
<gco:CharacterString>NOAA/OAR/OER - Ocean Exploration and Research</gco:Char
</gmd:organisationName>
<gmd:contactInfo>
<gmd:CI_Contact>
<gmd:phone>
<gmd:CI_Telephone>
<gmd:voice>
<gco:CharacterString>301-713-9444</gco:CharacterString>
</gmd:voice>
<gmd:facsimile>
E [Xerces] cvc-elt.1: Cannot find the declaration of element 'gmd:MD_Metadata'.
Text Grid Author
Find: Next Previous All Incremental Case sensitive
Q:\MetadataTrainingMaterial\ISO\sampleISOresolved.xml
U+003C
1:1

oXygen

PROS

- More power!
- Support any standard if you have the schemas
- Easy to edit
- Batch functions
- Performs transformations
- Performs validation
- CSS support
- Ties into other tools
- Everything you need in a single tool

CONS

- Software costs
- Must set up validation and transformation scenarios

oXygen

http://www.oxygenxml.com/

ISO Metadata Editor Review

http://www.fgdc.gov/participation/working-groups-subcommittees/mwg/isoreview/index_html

Creating ISO Metadata via Transforms

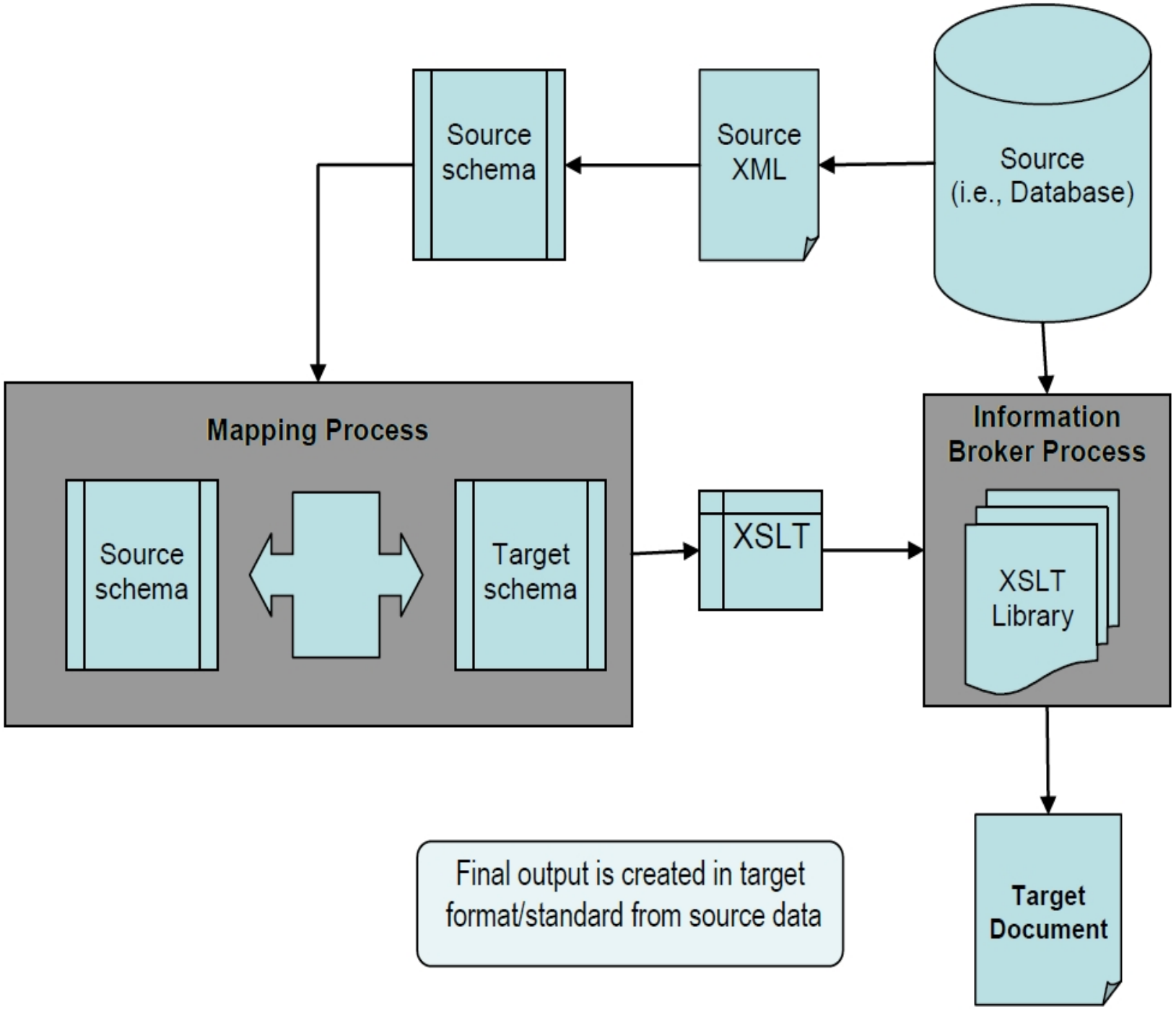
- Extensible Stylesheet Language Transformations (XSLT) is an XML-based language used for the transformation of XML documents into other XML or "human-readable" documents via stylesheets (XSL).
- The original document is not changed; rather, a new document is created based on the content of an existing one.
- It does NOT guarantee valid XML records against a particular schema!!!! (simply displays the content in a new way.)

Transforming Metadata

FGDC Name	FGDC XML Tag	ISO Name	Comment
Identification Information	idinfo		
Citation	citation	MD_Metadata, identificationInfo, MD_DataIdentification?, citation	
Description	descript		Compound element, unnecessary mapping
Abstract	abstract	MD_Metadata, identificationInfo, MD_DataIdentification?, abstract	
Purpose	purpose	MD_Metadata, identificationInfo, MD_DataIdentification?, purpose	
Supplemental Information	supplinf	MD_Metadata, identificationInfo, MD_DataIdentification?, supplementalInformation	
Time Period of Content	timeperd		
Time Period Information	timeinfo	MD_Metadata, ide... MD_DataIdentifica... temporalElement, gml:TimePeriod?	...ice
Currentness Reference	current	MD_Metadata, ide... MD_DataIdentifica... temporalElement, gml:TimePeriod?.g...	...ied
Status	status		
Progress	progress	MD_Metadata, identificationInfo, MD_DataIdentification?, status	FGDC content needs converted MD_ProgressCode?, refer to FGDC to ISO library progress function

This is a part of the mapping for FGDC CSDGM to ISO 19115.

Comments are Best Practices or Questions


Source schema
Source XML
Source (i.e., Database)
Mapping Process
Source schema
Target schema
XSLT
Information Broker Process
XSLT Library
Final output is created in target format/standard from source data
Target Document

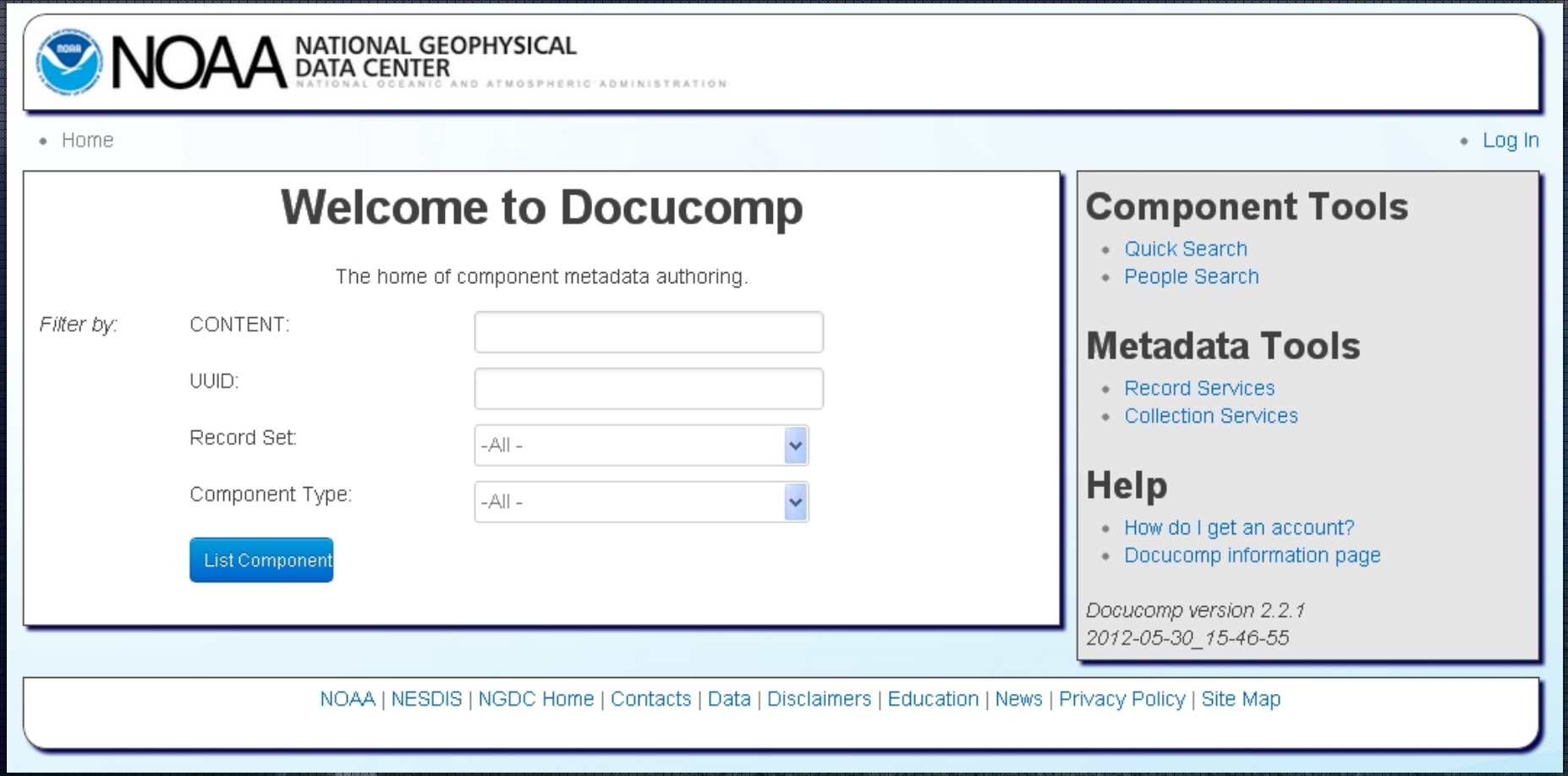
Transforming Metadata

Your input here is an xml version of a CSDGM record.

XSLT Transformation
csdgm2iso19115.xslt

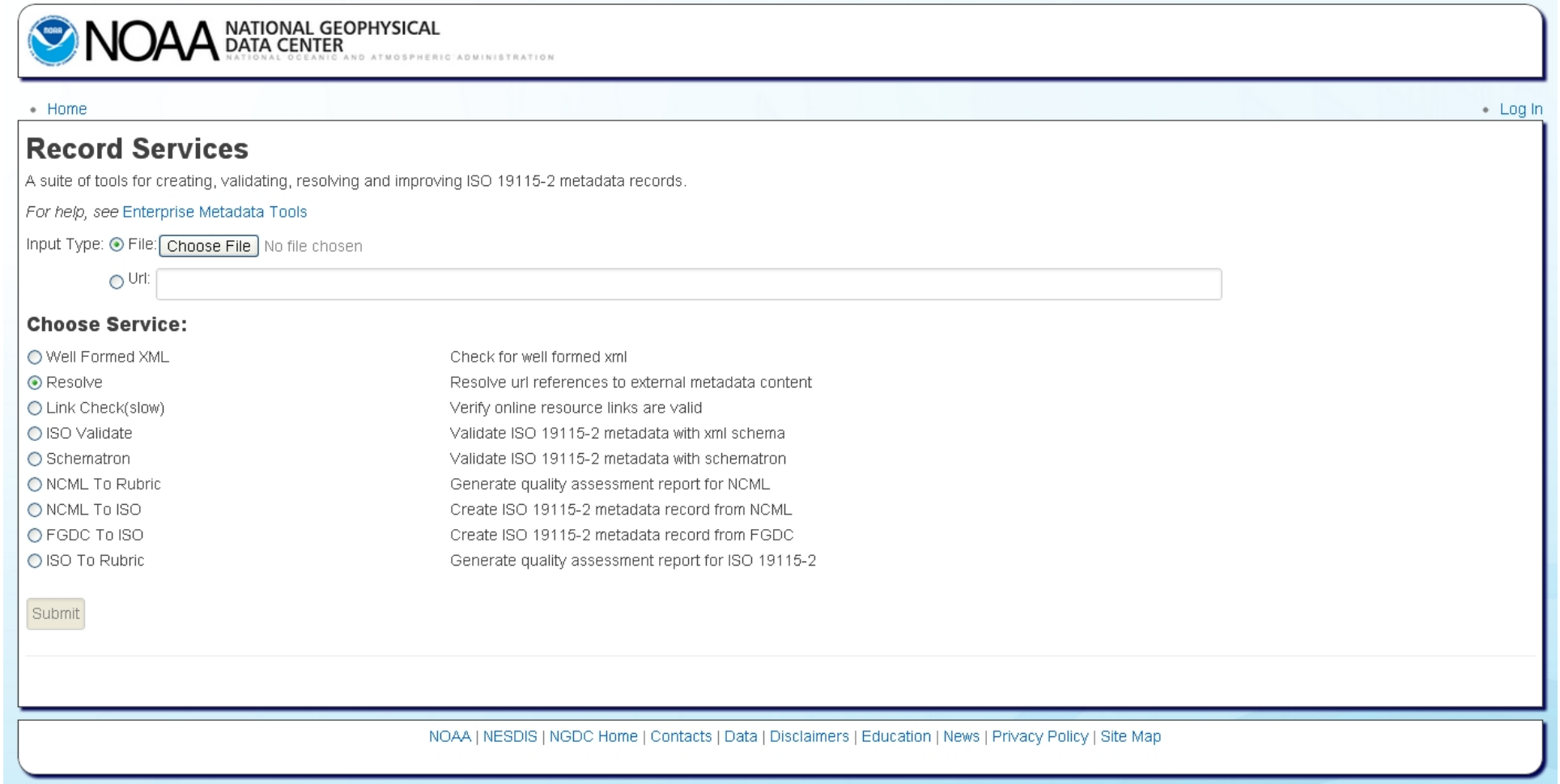
Your result is an xml instance of an ISO 19115 record.

Component Registry - Docucomp



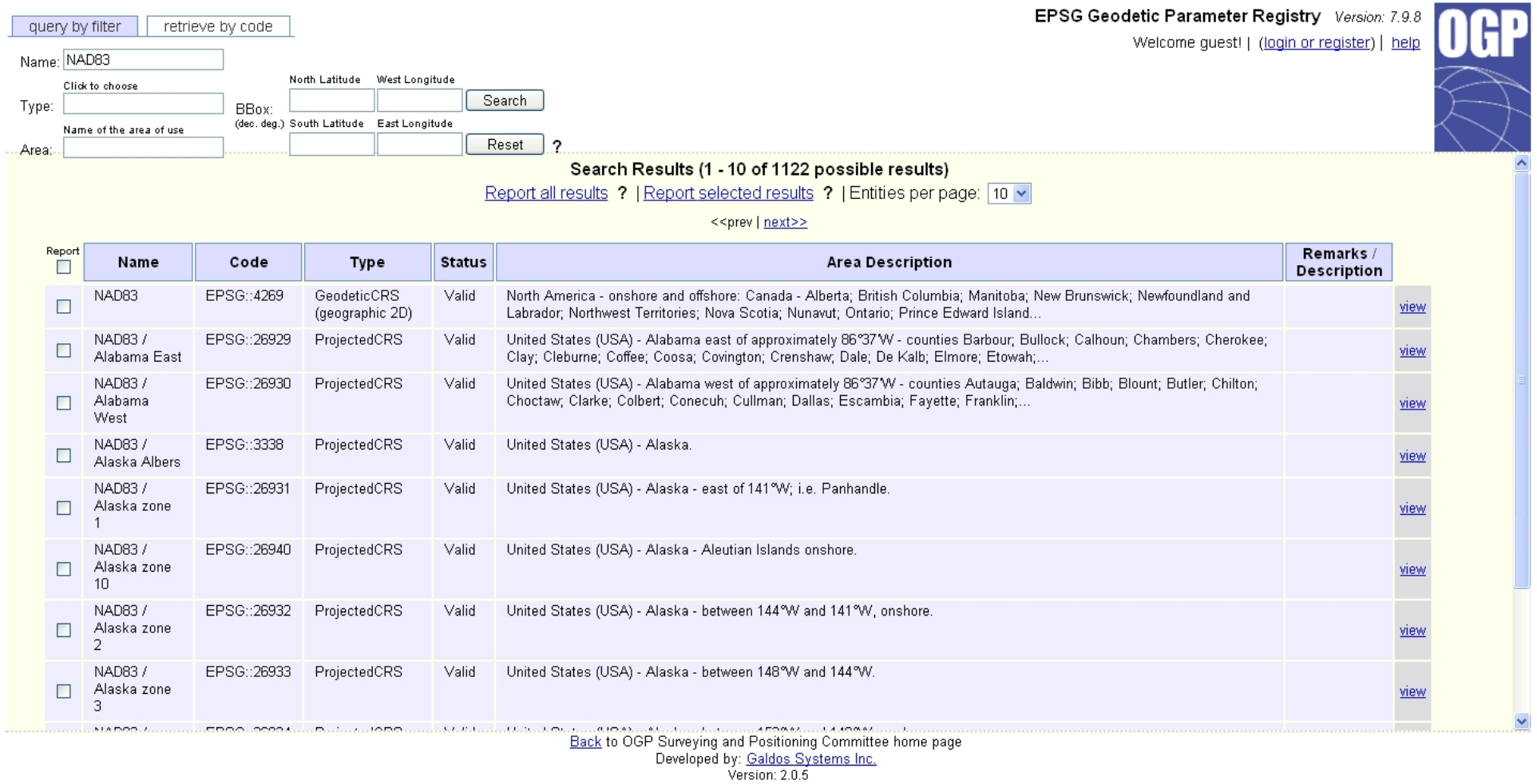
https://www.ngdc.noaa.gov/docucomp/

NGDC Record Services



https://www.ngdc.noaa.gov/docucomp/recordServices

EPSG Registry



query by filter | retrieve by code

EPSG Geodetic Parameter Registry *Version: 7.9.8*

Welcome guest! | (login or register) | help

Name: NAD83

Type: Click to choose

Area: Name of the area of use

BBox: (dec. deg.) North Latitude West Longitude South Latitude East Longitude

Search | Reset ?

Search Results (1 - 10 of 1122 possible results)

Report all results ? | Report selected results ? | Entities per page: 10

<<prev | next>>

Report	Name	Code	Type	Status	Area Description	Remarks / Description	
☐	NAD83	EPSG::4269	GeodeticCRS (geographic 2D)	Valid	North America - onshore and offshore: Canada - Alberta; British Columbia; Manitoba; New Brunswick; Newfoundland and Labrador; Northwest Territories; Nova Scotia; Nunavut; Ontario; Prince Edward Island...		view
☐	NAD83 / Alabama East	EPSG::26929	ProjectedCRS	Valid	United States (USA) - Alabama east of approximately 86°37'W - counties Barbour; Bullock; Calhoun; Chambers; Cherokee; Clay; Cleburne; Coffee; Coosa; Covington; Crenshaw; Dale; De Kalb; Elmore; Etowah;...		view
☐	NAD83 / Alabama West	EPSG::26930	ProjectedCRS	Valid	United States (USA) - Alabama west of approximately 86°37'W - counties Autauga; Baldwin; Bibb; Blount; Butler; Chilton; Choctaw; Clarke; Colbert; Conecuh; Cullman; Dallas; Escambia; Fayette; Franklin;...		view
☐	NAD83 / Alaska Albers	EPSG::3338	ProjectedCRS	Valid	United States (USA) - Alaska.		view
☐	NAD83 / Alaska zone 1	EPSG::26931	ProjectedCRS	Valid	United States (USA) - Alaska - east of 141°W; i.e. Panhandle.		view
☐	NAD83 / Alaska zone 10	EPSG::26940	ProjectedCRS	Valid	United States (USA) - Alaska - Aleutian Islands onshore.		view
☐	NAD83 / Alaska zone 2	EPSG::26932	ProjectedCRS	Valid	United States (USA) - Alaska - between 144°W and 141°W, onshore.		view
☐	NAD83 / Alaska zone 3	EPSG::26933	ProjectedCRS	Valid	United States (USA) - Alaska - between 148°W and 144°W.		view

Back to OGP Surveying and Positioning Committee home page

Developed by: Galdos Systems Inc.

Version: 2.0.5

http://www.epsg-registry.org/

Q & A

Email questions for the Q&A session to ncddcmetadata@noaa.gov